PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Alex Martinez

Applicant	:	Manabu Matsubara, et al.
Application No.	:	10/754,009
Filed	:	January 8, 2004
Title	:	REMOTE CONTROL ENGINE STARTING DEVICE FOR VEHICLE
Grp./Div.	:	N/A
Examiner	:	N/A
Docket No.	:	51766/DBP/A400

TRANSMITTAL OF DRAWINGS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 7068
Pasadena, CA 91109-7068
July 26, 2004

Commissioner:

Enclosed are 11 sheets of drawings for this application. They are submitted as replacement drawings to replace the corresponding drawings as originally filed.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By D Bruce Prout
D. Bruce Prout
Reg. No. 20,958
626/795-9900

DBP/aam
AAM PAS576415.1-*-07/26/04 2:09 PM

Fig.1

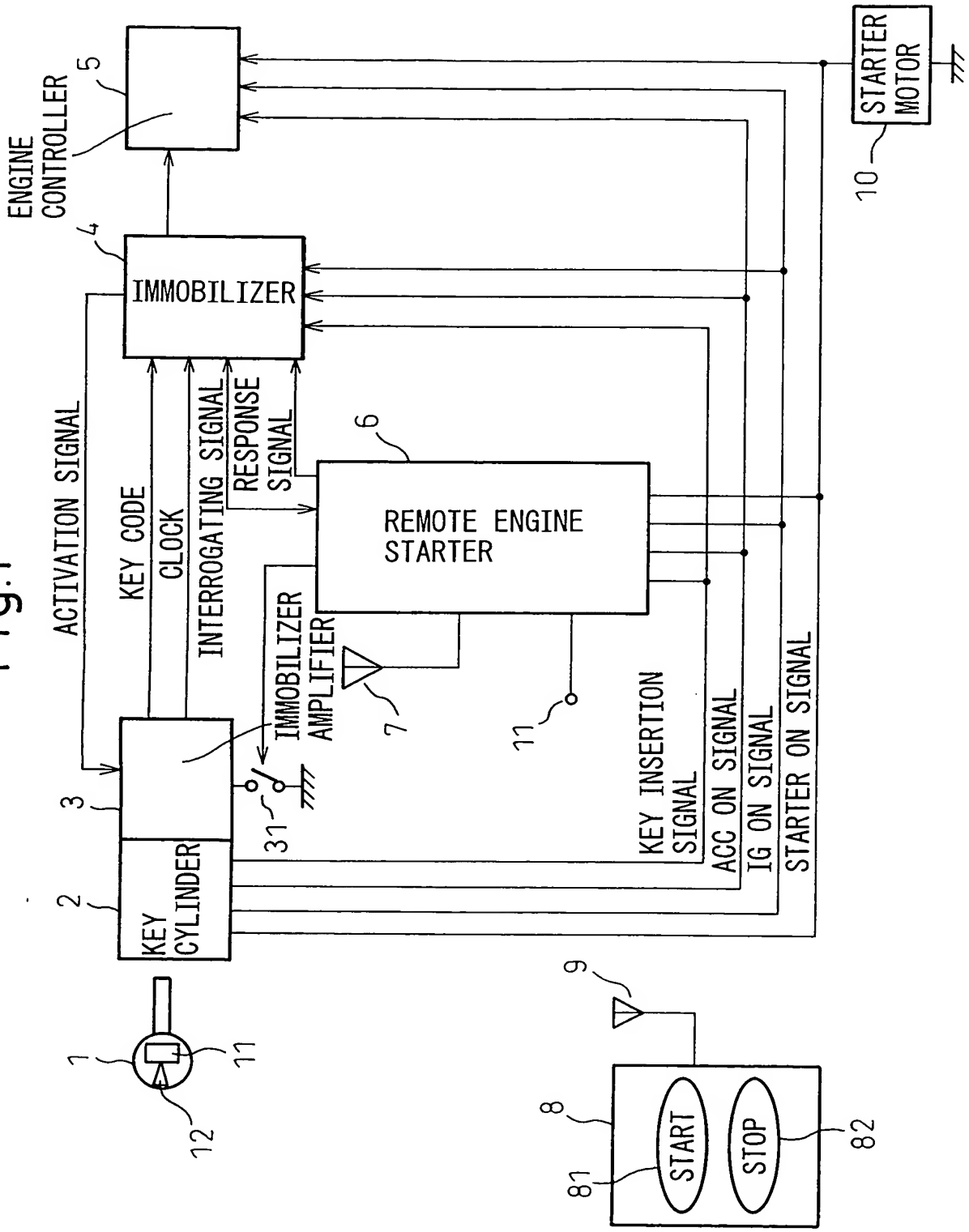

Fig.2

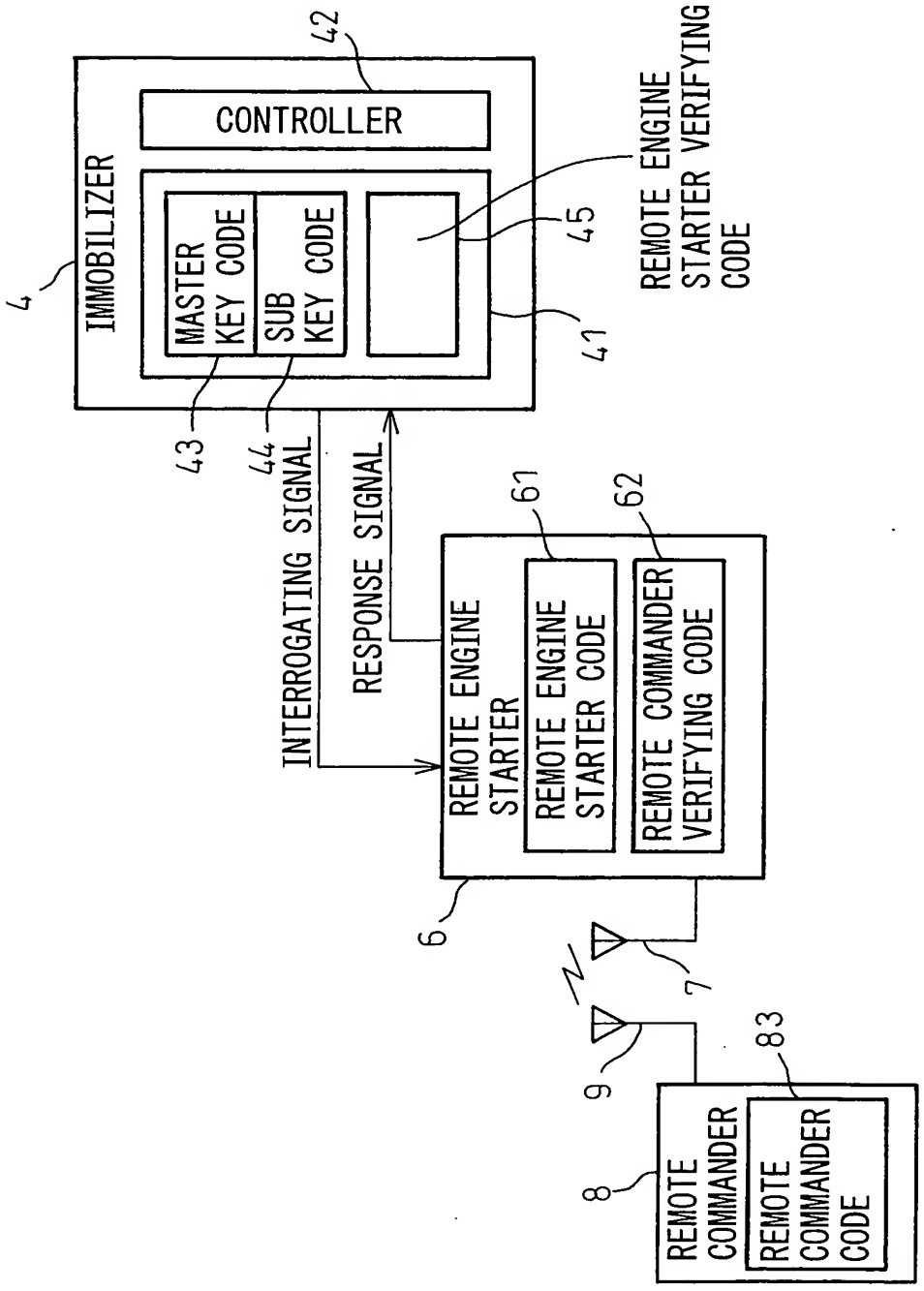
IMMOBILIZER
4
CONTROLLER
42
MASTER KEY CODE
SUB KEY CODE
43
44
45
41
REMOTE ENGINE STARTER VERIFYING CODE
INTERROGATING SIGNAL
RESPONSE SIGNAL
REMOTE ENGINE STARTER
61
REMOTE ENGINE STARTER CODE
62
REMOTE COMMANDER VERIFYING CODE
6
7
9
8
REMOTE COMMANDER
83
REMOTE COMMANDER CODE

Fig.3A

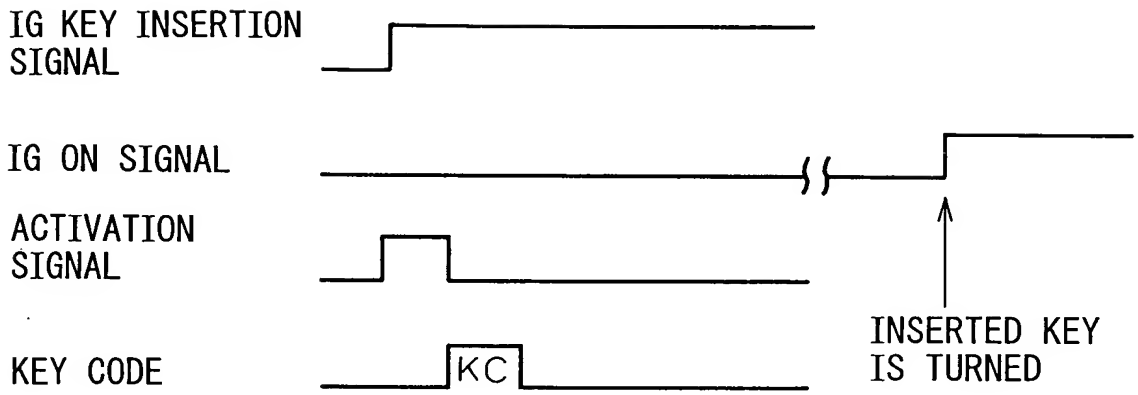
IG KEY INSERTION SIGNAL
IG ON SIGNAL
ACTIVATION SIGNAL
KEY CODE
KC
INSERTED KEY IS TURNED

Fig.3B

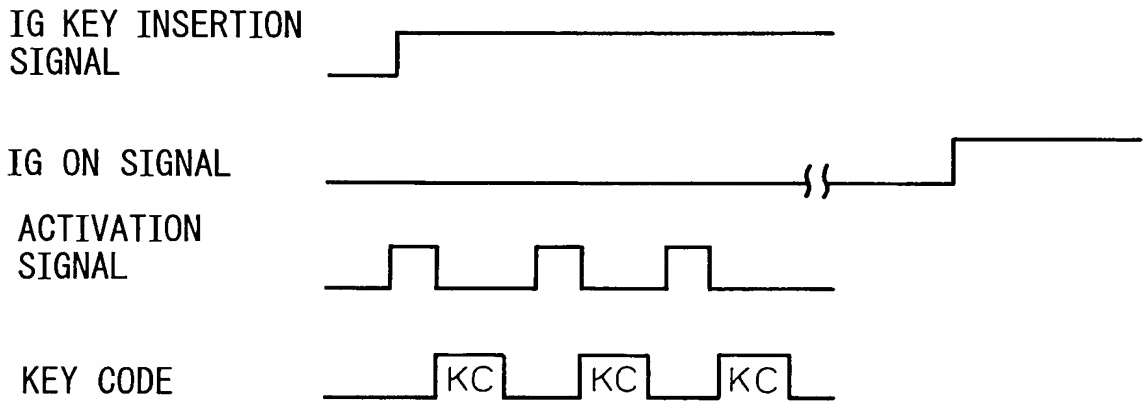
IG KEY INSERTION SIGNAL
IG ON SIGNAL
ACTIVATION SIGNAL
KEY CODE
KC
KC
KC

Fig.4A

REMOTE ENGINE STARTING

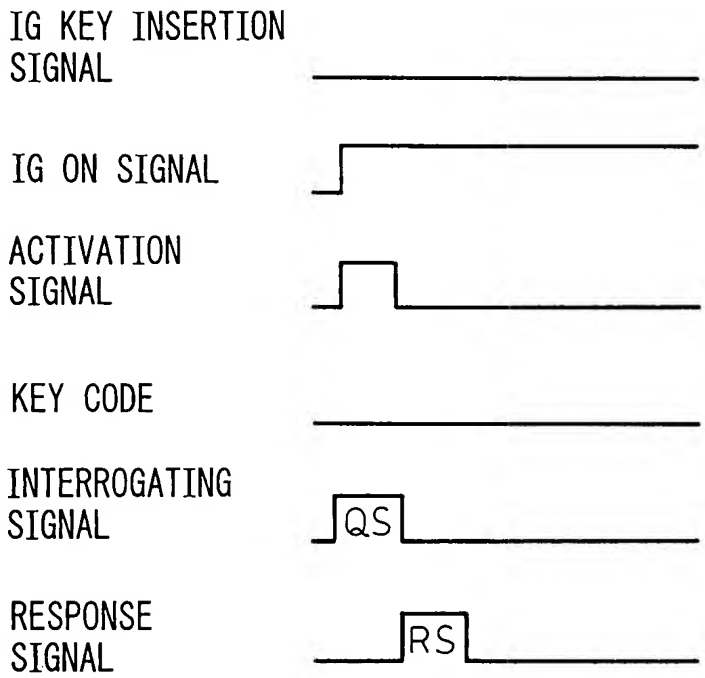

Fig.4B

ENGINE STARTING BY KEY INSERTION

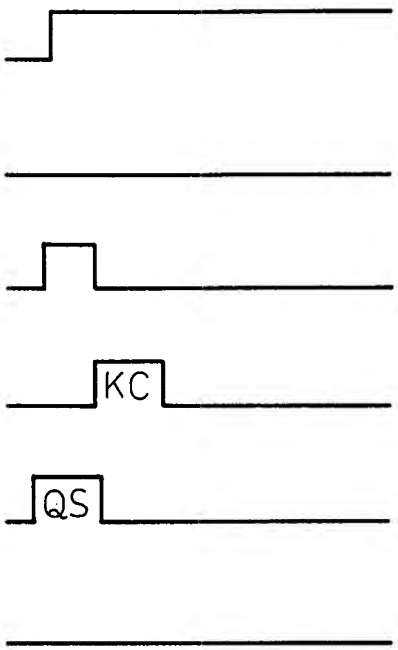

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Fig.5

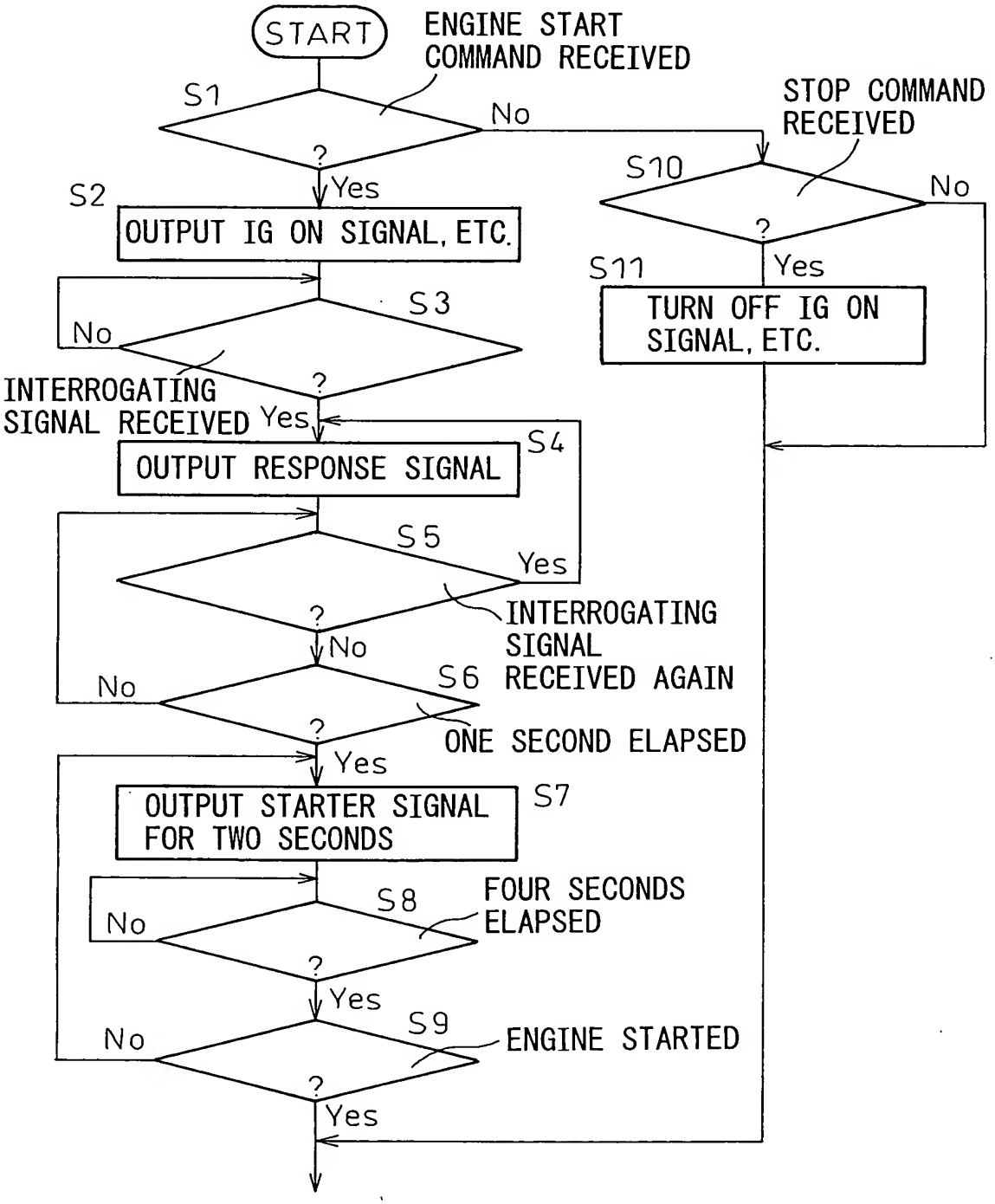
START
ENGINE START COMMAND RECEIVED
S1
No
?
Yes
S2
OUTPUT IG ON SIGNAL, ETC.
S3
No
INTERROGATING SIGNAL RECEIVED
?
Yes
S4
OUTPUT RESPONSE SIGNAL
S5
Yes
?
No
INTERROGATING SIGNAL RECEIVED AGAIN
No
S6
?
ONE SECOND ELAPSED
Yes
OUTPUT STARTER SIGNAL FOR TWO SECONDS
S7
S8
FOUR SECONDS ELAPSED
No
?
Yes
S9
No
ENGINE STARTED
?
Yes
STOP COMMAND RECEIVED
S10
No
?
S11
Yes
TURN OFF IG ON SIGNAL, ETC.

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Fig.6

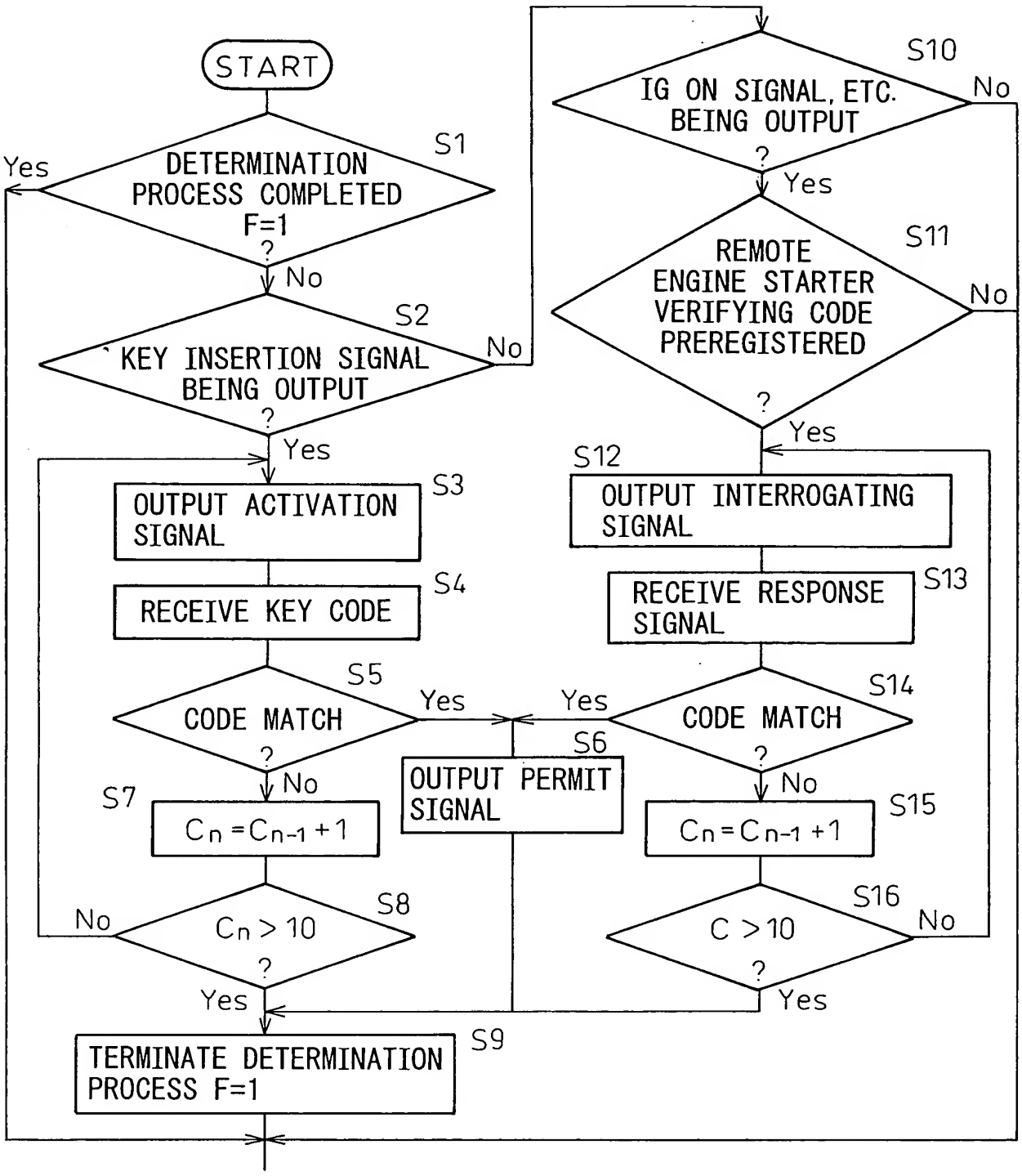
START
S1
DETERMINATION PROCESS COMPLETED F=1
?
Yes
No
S2
KEY INSERTION SIGNAL BEING OUTPUT
?
No
Yes
S3
OUTPUT ACTIVATION SIGNAL
S4
RECEIVE KEY CODE
S5
CODE MATCH
?
Yes
No
S7
Cn = Cn-1 + 1
S8
Cn > 10
?
No
Yes
S9
TERMINATE DETERMINATION PROCESS F=1
S10
IG ON SIGNAL, ETC. BEING OUTPUT
?
No
Yes
S11
REMOTE ENGINE STARTER VERIFYING CODE PREREGISTERED
?
No
Yes
S12
OUTPUT INTERROGATING SIGNAL
S13
RECEIVE RESPONSE SIGNAL
S14
CODE MATCH
?
Yes
No
S15
Cn = Cn-1 + 1
S16
C > 10
?
No
Yes
S6
OUTPUT PERMIT SIGNAL

Fig.7A

REMOTE ENGINE STARTING

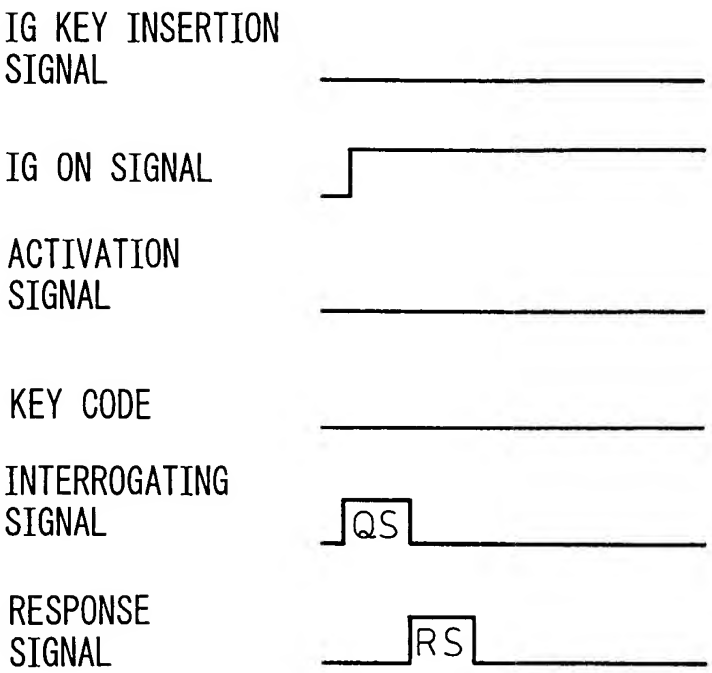

Fig.7B

ENGINE STARTING BY KEY INSERTION

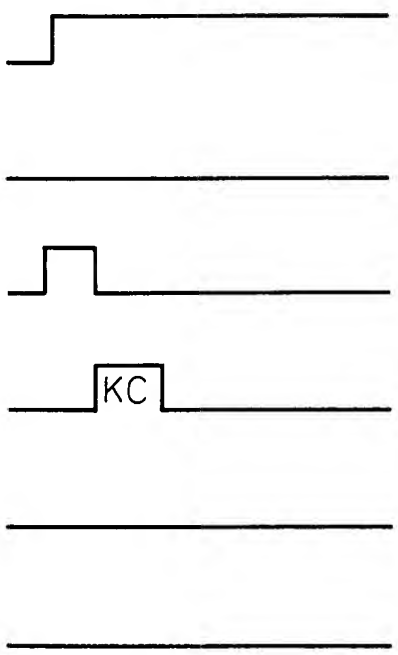

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Fig.8

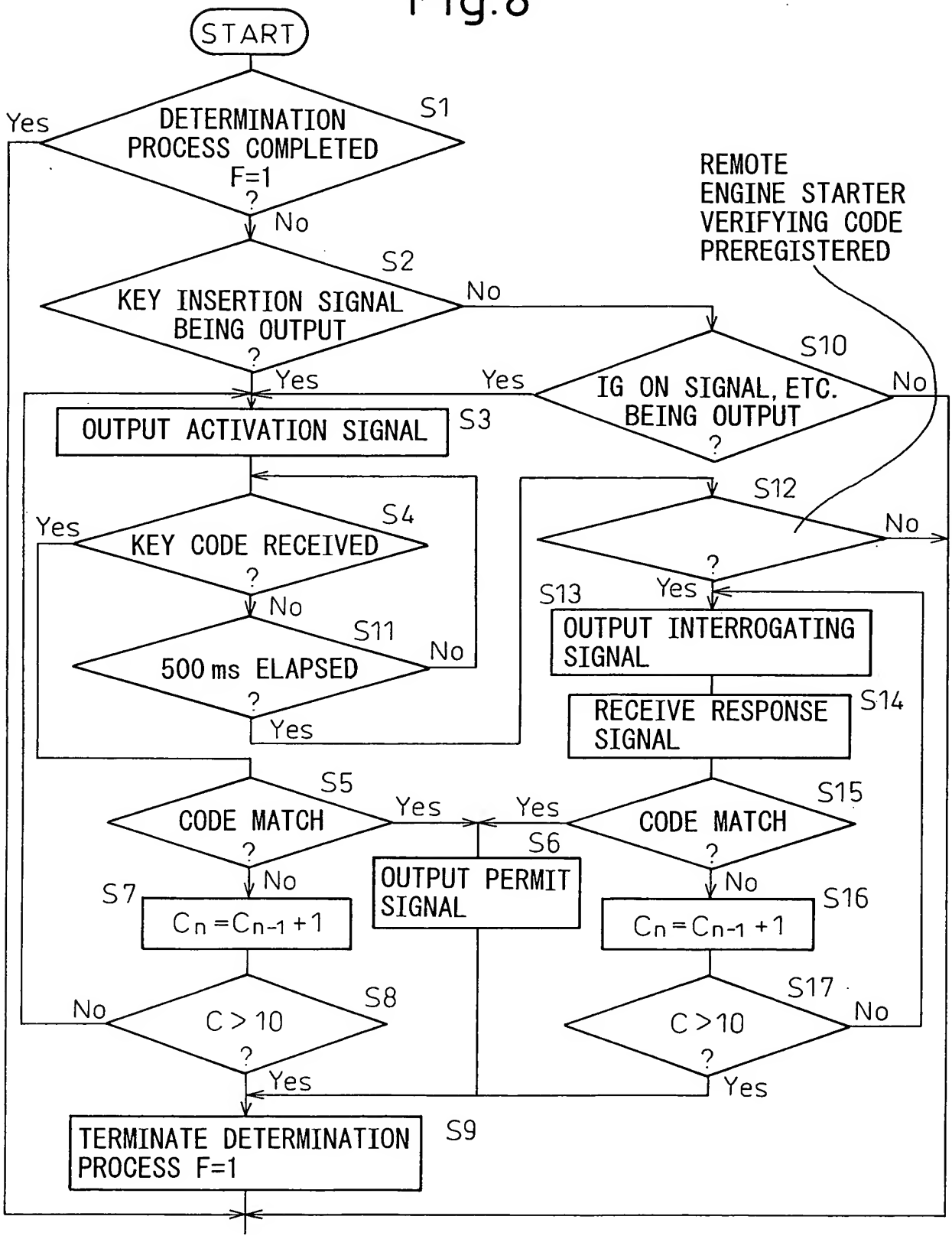

START
DETERMINATION PROCESS COMPLETED F=1 ?
S1
Yes
No
KEY INSERTION SIGNAL BEING OUTPUT ?
S2
No
Yes
REMOTE ENGINE STARTER VERIFYING CODE PREREGISTERED
IG ON SIGNAL, ETC. BEING OUTPUT ?
S10
Yes
No
OUTPUT ACTIVATION SIGNAL
S3
KEY CODE RECEIVED ?
S4
Yes
No
500 ms ELAPSED ?
S11
No
Yes
?
S12
No
Yes
OUTPUT INTERROGATING SIGNAL
S13
RECEIVE RESPONSE SIGNAL
S14
CODE MATCH ?
S5
Yes
CODE MATCH ?
S15
Yes
OUTPUT PERMIT SIGNAL
S6
No
Cn=Cn-1+1
S7
No
Cn=Cn-1+1
S16
C>10 ?
S8
No
Yes
C>10 ?
S17
No
Yes
TERMINATE DETERMINATION PROCESS F=1
S9

Fig.9A

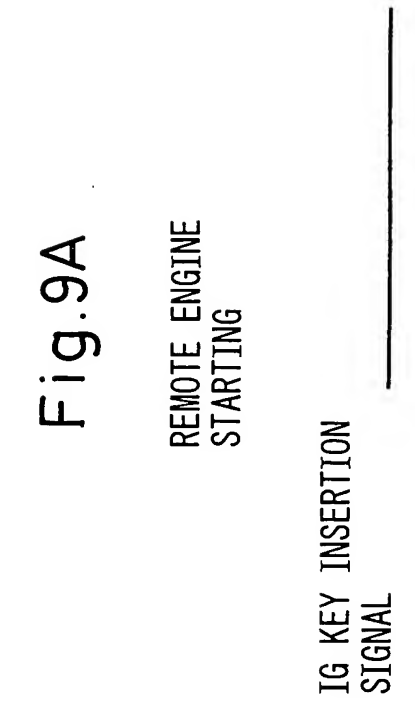

REMOTE ENGINE STARTING
IG KEY INSERTION SIGNAL
IG ON SIGNAL
ACTIVATION SIGNAL
KEY CODE
INTERROGATING SIGNAL
RESPONSE SIGNAL
QS
RS

Fig.9B

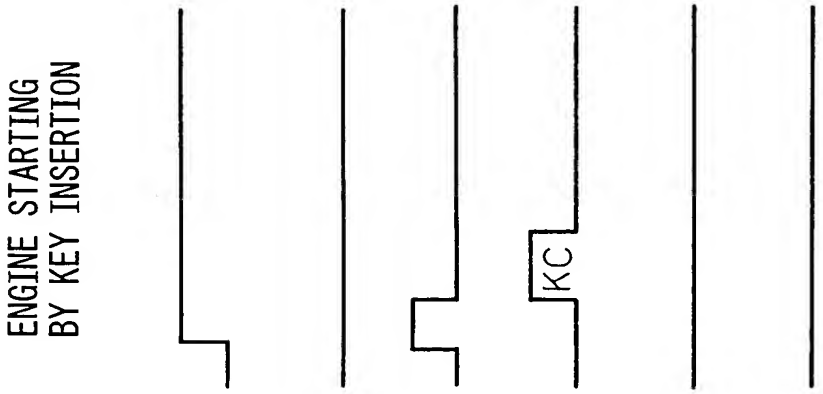

ENGINE STARTING BY KEY INSERTION
KC

Fig.10

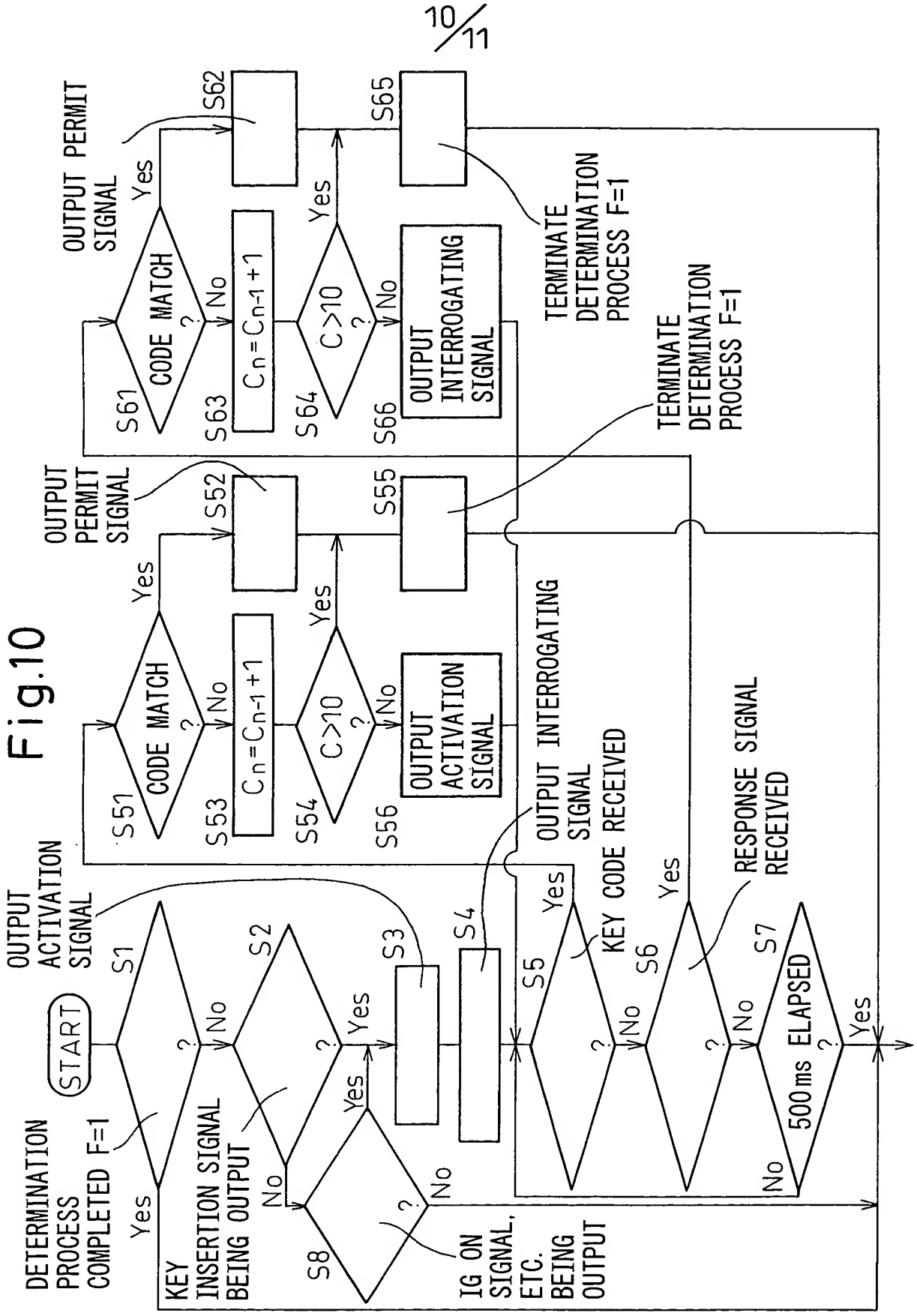

START
S1
DETERMINATION PROCESS COMPLETED F=1
Yes
No
S2
KEY INSERTION SIGNAL BEING OUTPUT
Yes
No
S3
OUTPUT ACTIVATION SIGNAL
S4
OUTPUT INTERROGATING SIGNAL
S5
KEY CODE RECEIVED
Yes
No
S6
RESPONSE SIGNAL RECEIVED
Yes
No
S7
500 ms ELAPSED
Yes
No
S8
IG ON SIGNAL, ETC. BEING OUTPUT
Yes
No
S51
CODE MATCH
Yes
No
S52
OUTPUT PERMIT SIGNAL
S53
Cn=Cn-1+1
S54
C>10
Yes
No
S55
TERMINATE DETERMINATION PROCESS F=1
S56
OUTPUT ACTIVATION SIGNAL
S61
CODE MATCH
Yes
No
S62
OUTPUT PERMIT SIGNAL
S63
Cn=Cn-1+1
S64
C>10
Yes
No
S65
TERMINATE DETERMINATION PROCESS F=1
S66
OUTPUT INTERROGATING SIGNAL

Fig.11A

REMOTE ENGINE STARTING

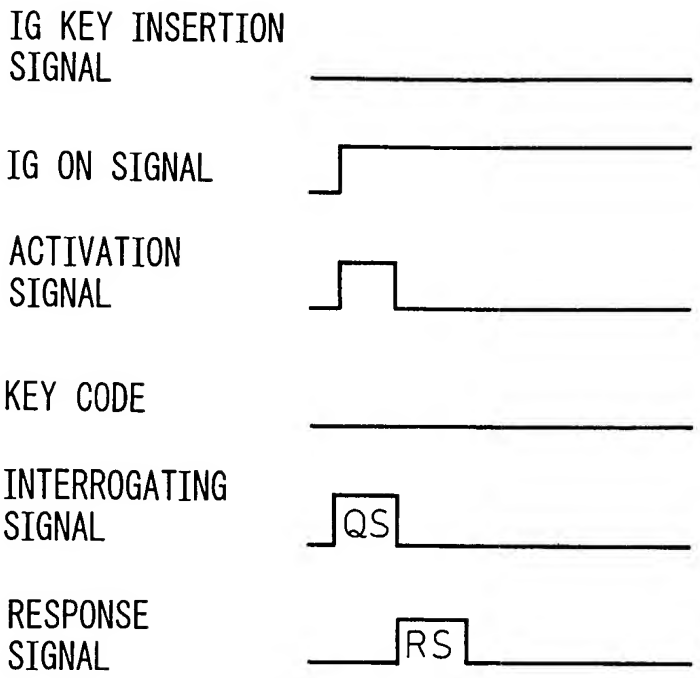
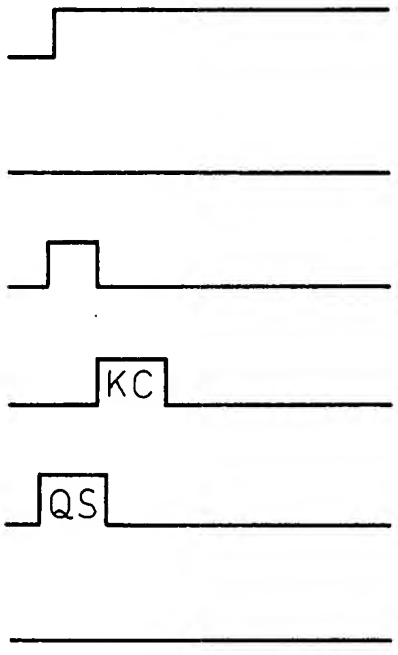


Fig.11B

ENGINE STARTING BY KEY INSERTION



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